

Drupal Cheat Sheet

PLATFORM

Request: index.php (11.4: autoload_runtime.php, Symfony Runtime) → DrupalKernel → HttpKernel → route match → access check → controller → render array → render pipeline + cache → Response.

Model: entity type (node, user, taxonomy_term, media) → **bundle** (content type) → **fields** (typed, with widget + formatter).

Config = site structure, YAML, exported (config:export) · **Content** = entities in DB, not exported · **State** = per-environment values (Drupal::state(), last cron), never exported.

Line	Status 2026-10-30
11.4	current; bugfix+security, PHP 8.3-8.5
11.3	security only until Dec 2026
11.5 / 12.0	scheduled together, week of 2026-12-07; 12.0 in beta
10.6	last 10.x; EOL 2026-12-09

	D10	D11	D12
PHP	8.1+	8.3+	8.5
MySQL	5.7.8	8.0	8.0
MariaDB	10.3.7	10.6	10.11
PgSQL*	12	16	18**
SQLite	3.26	3.45	3.45
Composer	2.3.6	2.7.0	latest

*needs pg_trgm. **docs say 18; beta installer reports 16; plan for 18. Apache 2.4.7+/nginx; IIS unsupported since 11.0.

```
project/
composer.json  composer.lock
config/sync/   (outside web)
private/       (outside web)
vendor/        drush/ recipes/
web/ core/ modules/{contrib,custom}
themes/{contrib,custom}
profiles/sites/default/{settings.php,
services.yml,files}
```

INSTALL

```
composer create-project drupal/recommended-project:^11 meridian
cd meridian
cd web
ddev config --project-type=drupal11 --docroot=web
ddev start; ddev composer require drush/drush
ddev drush site:install standard --account-name=admin \
--site-name="Meridian" -y
ddev drush uli # one-time login link
ddev drush cex -y # first export
```

Drupal CMS (2.x, Canvas editor; templates Byte, Starter+Mercury, Blank; optional AI assistant; DDEV 1.25+ for 2.2):

```
ddev config --project-type=drupal11 --docroot=web
ddev composer create-project drupal/cms
ddev launch
```

Profiles: Standard (since 11.4 no Article/Page), Minimal, Umami (demo). Web root web/.

SITE BUILDING

Recipe: content type → fields (Manage fields) → widgets (form display) → formatters (view modes: default, teaser) → **View** (list, filter, sort, pager, contextual filter, exposed filters) → permissions.

Core field types: string, text (+long, summary), integer/decimal/float, boolean, list, email, link, telephone, timestamp, datetime, daterange, image, file, entity reference (node, term, user, media), comment, layout_section.

Text formats: Basic HTML, Full HTML, Restricted HTML, Plain; CKEditor 5; filters; give Full HTML only to trusted roles.

Layout Builder (per-bundle or per-entity layouts, sections, blocks, core) vs **Canvas** (contrib, visual editor, SDC/code components, default in Drupal CMS 2; needs 11.3+).

Roles/permissions: anonymous, authenticated, administrator + custom; grant per role at /admin/people/permissions; mind “restrict access” ones.

Moderation: Content Moderation + Workflows: Draft → Published (+ Archived); add Review states and transitions with per-role permissions; revisions + Revert; Workspaces for staging sets.

Multilingual: language (UI), locale (translations), content_translation, config_translation; negotiation: URL prefix/domain, user, browser.

Leaving core in 12: Ban, Contact, Field Layout, History, Search, Settings Tray, Shortcut, Telephone, Toolbar, Claro, Olivero, Stable 9, Migrate Drupal. (11.0 already moved Actions UI, Activity Tracker, Book, Forum, Statistics, Tour.) Install the contrib versions before upgrading.

ADMINISTRATION

```
// settings.php (safe values)
$settings['hash_salt'] = getenv('SALT');
$settings['trusted_host_patterns'] = [
  'www.example.org', 'example.org'];
$settings['config_sync_directory'] = '../config/sync';
$settings['file_private_path'] = '../private';
$settings['reverse_proxy'] = TRUE;
$settings['reverse_proxy_addresses'] = ['0.0.0.0', '10.0.0.10'];
$settings['reverse_proxy_trusted_headers'] = [
  'Request-Header_X_FORWARDED_FOR' | ...HOST | ...PORT | ...PROTO];
$settings['container_yamls'][] = __DIR__ . '/services.yml';
include settings.local.php only if it exists (dev)

Request::HEADER_X_FORWARDED_FOR | ...HOST | ...PORT | ...PROTO;
$settings['container_yamls'][] = __DIR__ . '/services.yml';
include settings.local.php only if it exists (dev)
```

Secrets from env, never committed.

drush deploy = updatedb → config:import → cache:rebuild → deploy:hook (11.2+: cache:warm). →yes in CI. Drush in require, not require-dev; build with composer install --no-dev --no.

Composer update: backup → composer outdated "drupal/*" → composer update "drupal/core-*" →with-all-dependencies → drush deploy → composer audit. Code updates only via Composer (UI install/update removed 11.0-11.2). Automatic Updates + Package Manager in contrib.

Security releases: core 3rd Wednesday of the month 12:00 America/New_York; bugfix window first-Wednesday week; PSA the Monday before a critical one; SA-CORE / SA-CONTRIB. Only current + previous minor (+ last minor of previous major) covered.

```
# recipe skeleton recipe.yml
name: Events
type: Site
recipes: [core/recipes/basic_html_format_editor]
install: [views, datetime]
config:
  actions:
    user.role.editor:
      grantPermissions: ['create event content']
# apply
drush recipe ../recipes/events -v
php core/scripts/drupal recipe ../recipes/events
```

Recipes have no update path: applied result is plain config.

Cache layers: page cache (anonymous) → dynamic page cache → render cache (#cache) → entity/discovery/config bins (cache.*) → reverse proxy/CDN (cache tags → purge) → browser. drush cr clears all.

Cron: every 1-3 h: drush core:cron (or ddev drush cron); disable Automated Cron on prod; runs queue workers, search indexing, update checks.

Hardening: trusted hosts; HTTPS+HSTS; no PHP in files; private files: no /core/install.php; security.enable_super_user false; remove dev modules (devel, debug verbosity); least-privilege roles; 2FA/TFA; updated & audited code; backups tested; drush core:requirements.

THEMING

```
# meridian.info.yml
name: Meridian
type: theme
base theme: false # or a theme; stable9 leaves core in 12
core_version_requirement: ^11
libraries: [meridian/global]
regions: {header: Header, content: Content, footer: Footer}
# meridian.libraries.yml
global:
  css: {theme: [css/base.css, {}]}
  js: {js/app.js: {}}
  dependencies: [core/drupal, core/once]
```

Attach: {{ attach_library('meridian/global') }} or libraries: in info.

Twig	Use
t trans	translate (literal)
render raw	render array / unsafe; avoid raw
clean_class clean_id	safe class/id
safe_join without	join / drop keys
format_date	date / @ % marks
placeholder	
path() url()	route URLs
link() file_url()	link / file URL
attach_library()	attach assets
create_attribute()	Attribute object
active_theme()	theme name

Suggestions: node--event--teaser.html.twig (entity--bundle--view mode); block--system-branding-block; field--node--field--event; page--front; add via hook_theme_suggestions_HOOK_alter().

```
php core/scripts/drupal generate-theme meridian \
--path themes/custom
# twig debug in development.services.yml
parameters:
  twig.config: {debug: true, cache: false}

# card/card.component.yml (SDC, core 10.3+)
name: Card
props:
  type: object
  properties: {title: {type: string}}
  slots: {body: {type: Body}}
```

```
{{ include('meridian:card', {title: t}) }}
{% embed 'meridian:card' with {title: t} %}
{% $block body %}{...{% endblock %}}{% endembed %}
```

Breakpoints meridian.breakpoints.yml: meridian.sm: {label: Small, mediaQuery: 'all and (min-width:640px)', weight: 1, multipliers: [1x,2x]}; used by responsive image styles.

MODULES (PHP)

```
# x.info.yml: name, type: module, core_version_requirement: ^11.2
# x.routing.yml
x.list:
  path: '/collection'
  defaults: {controller: '\Drupal\x\ControllerC', title: Collection}
  requirements: {permission: 'access content'}
# x.services.yml
services:
  Drupal\x\Svc: {autowire: true}
  Drupal\x\EventSubscriber\S: {tags: [event_subscriber]}

class C extends ControllerBase {
  public function list(): array {
    return ['markup'=>$this->t('Hi'), 'cach e'=>['tags'=>['node_list'], 'contexts'=>['user.permissions'], 'max-age'=>3600]]; }
}
// src/Hook/NodeHooks.php (11.1+)
class NodeHooks { #[Hook('node_presave')]
  public function pre(NodeInterface $n): void {} }
class S implements EventSubscriberInterface {
  static function getSubscribedEvents(): array {
    return [KernelEvents::REQUEST=>'onReq']; } }

class SettingsForm extends ConfigFormBase {
  getEditableConfigNames() {return ['x.settings']; }
  getFormId() {return 'x_settings'; }
  buildForm(array $f, FormStateInterface $s) {
    ...
    submitForm(...) { $this->config('x.setting s')
      -->set('k', $s->getValue('k'))->save();
      parent::submitForm($f, $s); } }
  #[Block(id:'x_b', admin_label: new TranslatableMarkup('X'))]
  class XBlock extends BlockBase { build() {
    (...) }
    $ids=$storage->getQuery()->accessCheck(TRUE)
    -->condition('type','event')->sort('created','DESC')
    -->range(0,10)->execute(); }
```

```
Access: AccessResult::allowed() / forbidden() / allowedIfHasPermission($a,'p') / neutral() + =>cachePerPermissions() =
->addCacheableDependency($e). Routes:
_permission, entity_access: node.view, _custom_access.
Queue worker: {#[QueueWorker(id:'x_q', title: new TranslatableMarkup('X')), cron: ['time'=>30]]} extends QueueWorkerBase, processItem($data); enqueue with $queueFactory->get('x_q')->createItem($d).
Updates: hook_update_N() = schema/data change (runs in updatedb, before config import, config may be stale); hook_post_update_NAME() = entity/config work after the container is rebuilt, in x.post_update.php; hook_deploy_NAME() after config import (Drush).
```

APIS

JSON:API	Pattern
collection	/jsonapi/node/event
filter	?filter[status]=1&filter[field_x][operator]=CONTAINS&filter[field_x][value]=a
sort	?sort=-created
page	?page[limit]=20&page[offset]=40 (max 50)
include	?include=field_hero.field_media_image
fields	?fields[node--event]=title,path
write	POST/PATCH/DELETE, Content-Type: application/vnd.api+json

REST vs JSON:API vs GraphQL: JSON:API in core, zero config, entities, filters/includes, read+write; **REST** in core, resource config per entity/route, serialization formats (json, xml); **GraphQL** contrib, schema-defined, one query shape, best for tailored front ends; needs caching/persisted queries.

OAuth (Simple OAuth, contrib): authorization code + PKCE (user apps), client credentials (machine to machine), refresh token, password (avoid); scopes map to roles; keys via openssl; Authorization: Bearer. Also cookie + CSRF token (/session/token), basic_auth for tests only.

TOOLING

Top 20 Drush	
status cr	info / rebuild caches
updb deploy	updates / full deploy
cex cim	config export / import
cget cset	config get / set
en pmu	install / uninstall
uli ucrt	login link / create user
urol role:perm:add	roles/permissions
sql:cli sql:dump	DB shell / dump
sqlq php:eval	query / PHP one-liner
ws cron	watchdog / cron
queue:run state:get	queues / state
generate core:requirements	scaffold / health
theme:install locale:update	themes / translations

Tests: Unit UnitTestCase (no container), Kernel KernelTestCase, Functional BrowserTestCase, FunctionalJavascript WebDriverTestCase, Nightwatch/Playwright (browser). Dir tests/src/{Unit,Kernel,Functional}; PHPUnit 11.2+ #[Group('x')] #[CoversClass] attributes.

```
vendor/bin/phpunit -c phpunit.xml --filter testX path
vendor/bin/phpcs --standard=Drupal,DrupalPr actice web/modules/custom
vendor/bin/phpcbf ... (auto-fix)
vendor/bin/phpstan analyse web/modules/custom (level 5+)
composer require --dev drupal/upgrade_status palantirnet/drupal-rector
drush en upgrade_status; drush us-a --all
vendor/bin/rector process web/modules/custom --dry-run
```

UPGRADES AND AI

10 → 11 → 12 checklist:

- Backup; Composer-managed site; PHP 8.3+, DB minimums (above).
- Core ≥ **10.3** (10.6 → must go to **11.3+**); contrib latest.
- Upgrade Status, fix deprecations, Rector; remove IIS use.
- Install contrib versions of removed modules (Book, Forum, Statistics, Tour, Actions UI, Activity Tracker) first, do not uninstall.
- composer require drupal/core-recommended:^11 drupal/core-composer-scaffold:^11 -W; drush updb; test.
- D12 needs core **11.3+** (latest 11.x), PHP 8.5, Symfony 8, argon2 password hashing, replace Toolbar/Claro/Olivero/Stable 9;
- core_version_requirement: ^11 || ^12.

```
composer require 'drupal/ai:^1.5' drupal/key \
drupal/ai_provider_anthropic
drush pm:install ai key ai_provider_anthrop ic
composer require 'drupal/mcp_server:^2.0@beta'
drush pm:enable mcp_server
vendor/bin/drush mcp:server <user> # STDI 0
```

Treat model output and tool calls as untrusted; scope MCP tools to a least-privilege user; store keys with Key module.

CHANGED SINCE OLDER TUTORIALS

10.2	annotations → PHP attributes (#[Block])
11.1	.module hooks → OOP #[Hook] classes
10.3	SDC and recipes in core
2025	Drupal CMS (Jan); Canvas default editor in CMS 2
Drush 13	no drush.services.yml (use attributes)
11.2	PHPUnit attributes, not annotations
11.0-	UI module install/upload/update removed; Composer only
11.0	IIS unsupported; 6 modules to contrib
11.4	Standard profile: no Article / Page
12	Navigation replaces Toolbar; Default Admin replaces Claro; argon2id hashing